August 1.

The President, Dr. Ruschenberger, in the chair.

Twenty-four members present.

Diurnal Motion in Liatris pycnostachya.—Mr. Meehan called attention to a peculiar diurnal motion he had observed in *Liatris pycnostachya*. When throwing up its flower stems the top was always curved over towards the east in the early morning, nearly erect at midday, and towards the west at sundown. For commercial purposes he had thousands of plants growing, and the habit was uniform in all. The motion was evidently vertical, and not in a horizontal direction, and this still left it open to ascertain how the point turned towards the east for its early morning start. As soon as the flower spike approached its full growth the motion ceases.

Fasciated Branches.—In reference to a broadly flattened branch of a sweet potato on the table, to which attention had been directed by a member, Mr. Meehan said these branches were found on numerous plants, and there was no reason why all plants may not be found to produce them. They were species of fasciations, which took different forms at times. In trees they often appeared as "crow's nests." The old theory referred them to over-luxuriousness; but in a paper published in the Troy Proceedings of the American Association it was shown to be just the reverse. In union there is strength, in vegetable as in other bodies. Any tendency to a multiplicity of small branches on a tree instead of making a few large ones, all other things being equal, is an evidence of lower vitality. And this was proved by these fasciations. In severe winters fasciated branches were the first to die. Often they were the only branches that were destroyed.

Again, it had been shown in his papers before the American Association and before the Academy of Natural Sciences of Philadelphia, that only when a flowering portion of a plant was in the best conditions to maintain its hold on life, in other words in the highest conditions of vitality, did it produce pistils, or female flowers. With a lowered or depreciated vitality the male organs of the flower or male conditions were favored, and it was a singular fact that whenever these fasciations flowered, the female organs were nearly always abortive, and stamens and petals increased at their expense. These were some of the facts which had proved the old notion that over-luxuriousness, in the sense of high vital power, had nothing to do with fasciations, but rather the reverse.

The final cause of this defective vitality was imperfect nutri-

tion in that immediate part. This was as near to the full explanation as science could get as yet.

The facts were not as new as he liked to bring before the Academy, devoted as it is to original research; but the conclusions of the Troy paper are rather recent, and not yet well known, and this might excuse his remarks.

Mineralogical Notes.—Dr. GEORGE A. KŒNIG spoke about the coloring matter of the *amazon stone* from Pike's Peak. This beautiful mineral has lately been obtained in large specimens and in considerable quantity through the exertions of Dr. Foote, who furnished the author with the material for this investigation. The color of the amazon stone from Pike's Peak varies between a light bluish-green and a dark emerald-green. On many specimens the faces of modification, as prisms and domes, are without color, or yellowish, or flesh-colored. The interior of very large crystals is likewise of a much lighter color generally than the outside.

Assuming the coloring principle to be a compound of iron, the following experiments were made to test the value of this hypothesis:—

1. Fragments were exposed to the action of boiling hydrochloric acid and aqua regia for several days, until the liquid was free from iron. Under this treatment the intensity of color was increased, the coloring substance withstands, therefore, the action of the above agents.

2. Fragments, prepared by the treatment described, were placed in a glass tube, and hydrogen passed through the latter at a red heat. After cooling, the mineral was found possessed of an evenly spread *gray color.*

3. The same pieces were now treated with oxygen at a red heat, and exhibited, after cooling, an even *rose* color, the intensity of which was proportional to the intensity of the green.

4. Green fragments were heated in an atmosphere of dry chlorine, at increasing temperatures. No change occurred until at a red heat, when the mineral became perfectly white, and a slight sublimation of ferric chloride was noticed.

5. The rose-colored pieces become white when boiled in strong hydrochloric acid.

6. Thin fragments do not show at any place a concentration of the green color, when examined under the microscope.

7. Heated in the outer flame of a Bunsen burner, the same effect is caused as in the current of oxygen, but with a less brilliant color.

These experiments prove—

First. That the basis of the coloring substance is *iron.*

Second. That the iron is present as a very stable compound, probably as an organic salt.

Third. That the coloring substance is not in molecular combination with the feldspar; because, if it were so, the iron could